

Page 5 of 17  
Appln. No. 09/289,258  
Amendment

REMARKS

The claims and specification have been amended to address issues raised by the Examiner and reflect the suggestions made by the Examiner during recent telephone interviews between Applicants and the Examiner. Claims 193 and 203 have been amended. Claim 205 has been canceled. Nineteen (19) claims remain pending in the application: Claims 193-204 and 206-212. Attached hereto is a Version with Markings to Show Changes Made in the Specification/Claims for assisting the Examiner. Reconsideration of Claims 193-212 in view of the amendments above and arguments below is respectfully requested.

Initially, Applicants acknowledge with great appreciation the Examiner's participation and assistance over the course of several telephone interviews. Applicants further acknowledge and thank the Examiner for his generosity with his time, and for the suggestions made as to claims to which the Examiner would be receptive. The amendments to Claims 193 and 203 have been added in an attempt to reflect the suggestions made by the Examiner during the telephone interviews of October 31, 2001 and November 13, 2001. Specifically, each of Claims 193 and 203 now recite that the inhibiting substance comprises a powdered substance comprising capsaicin, dihydrocapsaicin, nordihydrocapsaicin, homocapsaicin, homodihydrocapsaicin or nonivamide, i.e., the capsaicinoids found within powdered oleoresin capsicum.

By way of this amendment, Applicants have made a diligent effort to place the claims in condition for allowance. However, should there remain any outstanding issues that require adverse action, it is respectfully requested that the Examiner telephone Thomas Lebens at (858) 587-7644 so that such issues may

Page 6 of 17  
Appln. No. 09/289,258  
Amendment

be resolved as expeditiously as possible.

Turning to the specific objections and rejections:

1. In paragraph 4 of the Office Action, Claims 193-202 and 205 stand rejected under 35 U.S.C. § 112, first paragraph, as not being enabled by the disclosure.

As suggested by the Examiner during the telephone interview of November 13, 2001, Applicants have amended Claims 193 and 203 to recite that the powdered substance of Claim 193 and Claim 203 includes a powdered substance comprising capsaicin, dihydrocapsaicin, nordihydrocapsaicin, homocapsaicin, homodihydrocapsaicin or nonivamide. Claim 205 has also been canceled. Furthermore, the specification has been amended to include the capsaicinoids found in powdered oleoresin capsicum. These amendments are supported by Claim 194, the Declaration of Edward J. Vasel, Scott C. Nunan, Gregory A. Niederhaus and Peter G. Coakley<sup>1</sup> and the Declaration of Edward J. Vasel<sup>2</sup>, which are attached hereto and provide a publication indicating the known capsaicinoids within powdered oleoresin capsicum. Applicants note that the Examiner has previously indicated that such an amendment to the claims should overcome the present rejection, given a showing of the compounds known in the art to be found within powdered oleoresin capsicum. Thus, it is respectfully submitted that the rejection is overcome and should be removed.

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<sup>1</sup>Vasel et al. Declaration, paragraph 20 and page J5 of Exhibit J.  
[Hereinafter, the format "Vasel et al., par. 20 and pg. J5 of Ex. J" will be used]

<sup>2</sup>Vasel Declaration, paragraphs 4 through 7 and pages J4 and J5 of Exhibit J of the Vasel, et al. Declaration [Hereinafter, the format "Vasel, para 4-para 7 and pgs. J4-J5 of Ex. J" will be used]

Page 7 of 17  
Appln. No. 09/289,258  
Amendment

2. In paragraph 7 of the Office Action, Claims 203, 206 and 208-212 stand rejected under 35 U.S.C. § 102(e), as being anticipated by U.S. Patent No. 6,230,630 (Gibson et al.).

In order to overcome the present rejection, Applicants submit evidence establishing a reduction to practice of the claimed invention prior to the filing date of Gibson et al., i.e., prior to March 9, 1999; thus, overcoming the rejection under 35 U.S.C. § 102(e). This evidence is submitted in the form of the following declarations under 37 C.F.R. 1.131: (a) the Declaration of Edward J. Vasel, Scott C. Nunan, Gregory A. Niederhaus and Peter G. Coakley (hereinafter referred to as the "Vasel, et al. declaration"); and (b) the declaration of Edward J. Vasel (hereinafter referred to as the "Vasel declaration").

When any claim of an application is rejected under 35 U.S.C. § 102(e), the inventor of the subject matter of the rejected claim may submit an appropriate oath or declaration to establish invention of the subject matter of the rejected claim prior to the filing date of the reference on which the rejection is based.<sup>3</sup> The declaration under 37 CFR 1.131 must establish possession of either the whole invention claimed or something falling within the claim, in the sense that the claim as a whole reads on it.<sup>4</sup> Proof of a reduction to practice of the invention prior to the filing date of the reference is sufficient to overcome a rejection based upon the reference.<sup>5</sup>

Generally, *proof of an actual reduction to practice requires a showing that the apparatus actually existed and worked*

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<sup>3</sup>37 CFR § 1.131(a).

<sup>4</sup>*In re Tanczyn*, 347 F.2d 830, 146 USPQ 298 (CCPA 1965).

<sup>5</sup>37 CFR 1.131(b)

Page 8 of 17  
Appln. No. 09/289,258  
Amendment

for its intended purpose.<sup>6</sup> However, there are some devices so simple that a mere construction of them is all that is necessary to constitute reduction to practice.<sup>7</sup>

As established in the Vasel, et al. declaration, a purchase order for 15,000 powder-filled frangible projectiles was placed with Perfect Circle Paintball, Inc. prior to March 9, 1999 for the purpose of testing the effectiveness of mass produced projectiles.<sup>8</sup> This purchase order was pursuant to a Non-Disclosure agreement.<sup>9</sup> 10,000 projectiles were to contain an inert substance and 5,000 projectiles were to contain powdered active ingredient - powdered oleoresin capsicum.<sup>10</sup>

These projectiles were to be made in accordance with a Spec. Sheet that specified that the projectiles were to include frangible plastic spheres and to be volume-filled to at least 75% full or better with inert or OC powder.<sup>11</sup> The shell was made of a rigid frangible plastic<sup>12</sup> material and was designed to rupture or break apart upon impact with a target releasing the powdered contents of the shell into a cloud about the target.<sup>13</sup> Furthermore, the projectiles made by Perfect Circle Paintball,

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<sup>6</sup>MPEP 715.07.

<sup>7</sup>In re Asahi/America Inc., 94-1249 (Fed. Cir. 1995).

<sup>8</sup>Vasel et al., para6 and pgs. A1-A4 of Ex. A.

<sup>9</sup>Id.

<sup>10</sup>Vasel et al., para9 and pg. A5 of Ex. A.

<sup>11</sup>Id.

<sup>12</sup>Id.

<sup>13</sup>Vasel et al., para11, para17 and Ex. I.

E

Page 9 of 17  
Appln. No. 09/289,258  
Amendment

Inc. were to be made of polystyrene<sup>14</sup>, i.e., a *rigid plastic* material.

The Spec. Sheet also provides that the projectiles are to be similar to "Type C" projectiles, except without the ballast weight.<sup>15</sup> Type C projectiles are illustrated as spherical projectiles having a *shell* having a *thickness* and a *volume formed* therein.<sup>16</sup> The volume of the Type C projectile is at least 50% filled with an inhibiting substance made up of *powdered pepper* or simulant and the ballast weight.<sup>17</sup>

The Spec. Sheet also provides that Jaycor will provide the powdered OC.<sup>18</sup> Exhibit D of the Vasel et al declaration provides an invoice for receipt *powdered oleoresin capsicum* (OC) from Aardvark Tactical, Inc. prior to March 9, 1999.<sup>19</sup> Portions of this OC powder was supplied to the manufacturer.<sup>20</sup> The Spec. Sheet of Exhibit A and the illustration of a "type C" projectile existed prior to March 9, 1999.<sup>21</sup>

Furthermore, these projectiles were designed to be *launched from a compressed gas launcher*, e.g., a paintball launcher, not from within a cartridge containing an ignitable

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<sup>14</sup>Vasel et al., para10 and pgs. C1-C2 of Ex. C.

<sup>15</sup>Vasel et al., para7 and pg. A5 of Ex. A.

<sup>16</sup>Vasel et al., para8 and pg. B1 of Ex. B.

<sup>17</sup>Vasel et al., para8 and pg. B1 of Ex. B.

<sup>18</sup>Vasel et al., para9 and pg. A5 of Ex. A.

<sup>19</sup>Vasel et al., para12 and pgs. D1-D2 of Ex. D.

<sup>20</sup>Id.

<sup>21</sup>Vasel et al., para6 and para8.

Page 10 of 17  
Appln. No. 09/289,258  
Amendment

powder, i.e., not from a shotgun or other firearm.<sup>22</sup>

Exhibits E and F of the Vassel et al. declaration are invoices proving receipt of 10,000 "blue" projectiles (simulant projectiles containing an inert substance) and 5,000 "red" projectiles (projectiles containing powdered OC).<sup>23</sup> These invoices and completed projectiles were received by Jaycor prior to March 9, 1999.<sup>24</sup>

Exhibit G of the Vassel et al. declaration provides a recently taken photograph of several projectiles received in the invoices of Exhibits E and F.<sup>25</sup> These projectiles existed prior to March 9, 1999 and are volume filled to at least 75% full with a powdered substance.<sup>26</sup> The red projectiles of Exhibit G contain powdered oleoresin capsicum.<sup>27</sup>

Furthermore, a sample of powdered oleoresin capsicum, similar to that found in the projectiles received in the invoices of Exhibits E and F, as well as other samples of powdered oleoresin capsicum, were tested and found to include capsaicin, dihydrocapsaicin, nordihydrocapsaicin, homocapsaicin, homodihydrocapsaicin and nonivamide.<sup>28</sup>

Therefore, given the Vassel et al. declaration and Exhibits A-G and J and the Vassel declaration, it is respectfully

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<sup>22</sup>Vassel et al., parall.

<sup>23</sup>Vassel et al., pg. E1 of Ex. E and pg. F1 of Ex. F.

<sup>24</sup>Vassel et al., para12 and para13.

<sup>25</sup>Vassel et al., ex. G.

<sup>26</sup>Vassel et al., para15.

<sup>27</sup>Vassel et al., para9.

<sup>28</sup>Vassel et al., para20 and pg. J5 of Ex. J; and Vassel, para4-para7.

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Page 11 of 17  
Appln. No. 09/289,258  
Amendment

submitted that a device covered under either Claim 193 or Claim 203 existed prior to March 9, 1999.<sup>29</sup>

Furthermore, the projectiles delivered in the invoices of Exhibits E and F were extensively tested by Applicants. Exhibit H is a summary of a series of tests performed prior to March 9, 1999 to determine if the projectiles would work for their intended purpose.<sup>30</sup> Exhibit I illustrates a powder dispersion test performed prior to March 9, 1999 in which a mannequin is impacted with a projectile (from the invoices of Exhibits E and F) launched from a compressed gas launcher such that upon impact, the projectile ruptures and releases the powdered substance into a cloud proximate to the target.<sup>31</sup>

Furthermore, prior to March 9, 1999, all of the co-inventors of the present application witnessed one or more of these tests, reviewed and discussed test results, or reviewed notes or video tapes of these tests.<sup>32</sup> Prior to March 9, 1999, all co-inventors have been exposed to powdered oleoresin capsicum and understand its effect when inhaled.<sup>33</sup> And prior to March 9, 1999, at least one of the co-inventors has been shot with one of the red projectiles.<sup>34</sup>

Thus, prior to March 9, 1999, all co-inventors appreciated the utility of the projectiles and that the

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<sup>29</sup>Vasel et al., para19.

<sup>30</sup>Vasel et al., para16 and pg. H1 of Ex. H.

<sup>31</sup>Vasel et al., para17 and Ex. I.

<sup>32</sup>Vasel et al., para18.

<sup>33</sup>Id.

<sup>34</sup>Id.

Page 12 of 17  
Appln. No. 09/289,258  
Amendment

projectiles would work for their intended purpose.<sup>35</sup>

Thus, as required under MPEP 715.07, it is submitted that a projectile that includes all of the limitations specified in Claims 193 and 203 existed prior to March 9, 1999 and that all of the co-inventors recognized that the projectile worked for its intended purpose prior to March 9, 1999.

Therefore, it is respectfully submitted that Applicants have proven a reduction to practice of the invention as recited in Claims 193 and 203 prior to March 9, 1999. Thus, Applicants respectfully submit that the present rejection of Claims 203, 206 and 208-212 under 35 U.S.C. § 102(e) in view of the Gibson et al. reference is overcome and should be withdrawn.

3. In paragraph 8 of the Office Action, Claims 193-197, 199-202, 204 and 205 stand rejected under 35 U.S.C. § 103(a), as being unpatentable over U.S. Patent No. 6,230,630 (Gibson et al.) in view of U.S. Patent No. 5,750,918 (Mangolds et al.).

As discussed above, Applicants have established invention of the claimed subject matter prior to the effective date of Gibson et al.; thus, a further rejection under Gibson et al. is overcome. As such, Mangolds et al. alone does not teach or suggest the invention as recited in Claims 193-197, 199-202, 204. Claim 205 has been canceled. Therefore, it is respectfully submitted that the rejection is overcome and should be withdrawn.

4. In paragraph 9 of the Office Action, Claim 198 stands rejected under 35 U.S.C. § 103(a), as being unpatentable over U.S. Patent No. 6,230,630 (Gibson et al.) in view of U.S.

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<sup>35</sup>Vasel et al., para19.



Page 13 of 17  
Appln. No. 09/289,258  
Amendment

Patent No. 5,750,918 (Mangolds et al.) and U.S. Patent No. 5,353,712 (Olson).

As discussed above, Applicants have established invention of the claimed subject matter prior to the effective date of Gibson et al.; thus, a further rejection under Gibson et al. is overcome. As such, Mangolds et al. and Olson alone do not teach or suggest the invention as recited in Claim 198. Therefore, it is respectfully submitted that the rejection is overcome and should be withdrawn.

5. In paragraph 10 of the Office Action, Claim 207 stands rejected under 35 U.S.C. § 103(a), as being unpatentable over U.S. Patent No. 6,230,630 (Gibson et al.) in view of U.S. Patent No. 5,353,712 (Olson).

As discussed above, Applicants have established invention of the claimed subject matter prior to the effective date of Gibson et al.; thus, a further rejection under Gibson et al. is overcome. As such, Olson alone does not teach or suggest the invention as recited in Claim 207. Therefore, it is respectfully submitted that the rejection is overcome and should be withdrawn.

6. Furthermore, in the telephone interview of November 13, 2001, U.S. Patent No. 6,145,441 (Woodall et al.) and U.S. Patent No. 6,223,658 (Rosa et al.) were discussed. After review, Applicants submit that Woodall et al. and Rosa et al. both clearly disclose a projectile containing *liquid* oleoresin capsicum (such as found in *liquid* pepper spray), not powdered oleoresin capsicum nor a powdered substance comprising capsaicin, dihydrocapsaicin, nordihydrocapsaicin, homocapsaicin, homodihydrocapsaicin or

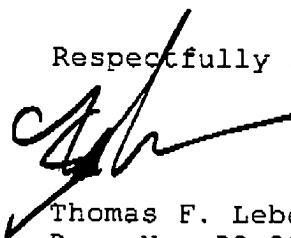
Page 14 of 17  
Appln. No. 09/289,258  
Amendment

nonivamide, as is recited in amended Claims 193 and 203. Thus, it is respectfully submitted that neither Woodall et al. nor Rosa et al. alone or in combination, disclose or teach a powdered substance as recited in Claims 193 and 203.

**CONCLUSION**

Applicants submit that the above amendments and remarks place the pending claims in a condition for allowance. Therefore, a Notice of Allowance is respectfully requested.

Respectfully submitted,



Thomas F. Lebens  
Reg. No. 38,221

Dated: Nov. 15, 2001

Attachments: Declaration of Edward J. Vasel, Scott C. Nunan,  
Gregory A. Niederhaus and Peter G. Coakley  
Declaration of Edward J. Vasel

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Page 15 of 17  
Appln. No. 09/289,258  
Amendment

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION

Changes made to the pending paragraph beginning on page 29, line 33:

Referring now to FIG. 1, a side view is shown of a projectile 10 for delivering an inhibiting substance, such as, pepper spray, oleoresin capsicum powder, tear gas, smoke or the like, to a living target, such as a human target, in accordance with one embodiment of the present invention. Most preferably, the inhibiting substance comprises finely powdered oleoresin capsicum, such as may be purchased from Defense Technology of America in Casper, Wyoming (for example, Blast Agent oleoresin capsicum #T14, #T16, #T21 and/or #T23). As is known in the art, oleoresin capsicum is known to contain or include capsaicin, dihydrocapsaicin, nordihydrocapsaicin, homocapsaicin, homodihydrocapsaicin and nonivamide. In the present embodiment, the oleoresin capsicum powder (referred to with respect to the present embodiment as "powder") is preferably purchased at a concentration of at least about 0.5%, e.g., between 1% and 30%, e.g., 3% and 10%, e.g. about 5% by volume. Alternatively, powder may be diluted, to a desired concentration, by mixing with an inert powdered substance, such as talcum or corn starch. In other embodiments, the projectile 10 may also be used to deliver other substances such as marking substances, including for example, dyes or paint, or the like, to a living or an inanimate target, and may also be used to deliver inert substances, such as talcum powder. In still further embodiments, the projectile may be used to

Page 16 of 17  
Appln. No. 09/289,258  
Amendment

deliver both inhibiting and marking substances to the target.

**IN THE CLAIMS**

Changes made to the pending claims:

193. (amended) A system comprising:

a frangible projectile to be impacted with a target;  
the frangible projectile comprising a rigid frangible shell having a thickness and a volume formed within, wherein the rigid frangible shell ruptures upon impact with the target; and  
an inhibiting substance contained within the volume and occupying at least about 50% of the volume;

wherein the inhibiting substance comprising a powdered inhibiting substance, wherein upon impact with the target the rigid frangible shell ruptures radially dispersing the powdered inhibiting substance proximate to the target into a cloud; and

wherein the inhibiting substance includes a powdered substance comprising capsaicin, dihydrocapsaicin, nordihydrocapsaicin, homocapsaicin, homodihydrocapsaicin or nonivamide [capsaicinoid].

203. (amended) A system comprising:

a frangible projectile without a cartridge containing an ignitable powder for launching the projectile, the frangible projectile to be impacted with a target;

wherein the frangible projectile comprises a frangible shell having a thickness and a volume within, the frangible shell comprising a rigid plastic material that ruptures upon impact with the target; and

an inhibiting substance within the volume and occupying at least about 50% of the volume within the frangible shell;

Page 17 of 17  
Appln. No. 09/289,258  
Amendment

wherein the inhibiting substance comprises a powdered inhibiting substance, wherein upon impact with the target, the frangible shell ruptures radially dispersing the powdered inhibiting substance proximate to the target into a cloud; and

wherein the powdered inhibiting substance comprises a powdered [~~pepper~~] substance comprising capsaicin, dihydrocapsaicin, nordihydrocapsaicin, homocapsaicin, homodihydrocapsaicin or nonivamide.